

ABSTRACT OF THE DISCLOSURE

When trying to check the lamination structure of devices advanced in scaling and integration, SEM observation is insufficient in resolution. TEM observation presents a problem such that high throughputs cannot be achieved because it is required to prepare a sample for TEM observation. To include: a focused ion beam apparatus for processing a sample surface and preparing a sample chip; a pick-up apparatus for picking up the sample chip; a sample chip holder for securing the sample chip picked up; an argon ion beam irradiating apparatus for etching a surface of the sample chip secured to the sample chip holder with an argon ion beam; and a SPM for observing the surface of the sample chip secured to the sample chip holder.